

## Plug-in Signal Conditioners K-UNIT

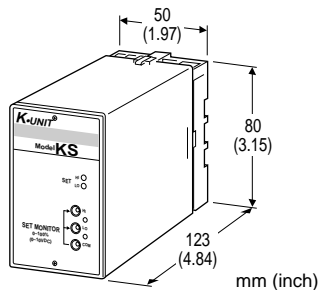
### DC ALARM

#### Functions & Features

- Providing relay contact closures at preset DC input levels
- Dual (Hi/Lo) trip
- Multi-turn screwdriver setpoint adjustments
- Monitor jacks provided for setpoint adjustments
- Enclosed relays
- Relays can be powered 110 V DC
- High-density mounting
- CE marking

#### Typical Applications

- Annunciator
- Various alarm applications



## MODEL: KS-[1][2]-[3]/CE

### ORDERING INFORMATION

- Code number: KS-[1][2]-[3]/CE
- Specify a code from below for each [1] through [3].  
(e.g. KS-62-H/CE)
- Special input range (For codes Z & 0)

### [1] INPUT

#### Current

- A: 4 - 20 mA DC (Input resistance 250  $\Omega$ )
- A1: 4 - 20 mA DC (Input resistance 50  $\Omega$ )
- B: 2 - 10 mA DC (Input resistance 500  $\Omega$ )
- C: 1 - 5 mA DC (Input resistance 1000  $\Omega$ )
- D: 0 - 20 mA DC (Input resistance 50  $\Omega$ )
- E: 0 - 16 mA DC (Input resistance 62.5  $\Omega$ )
- F: 0 - 10 mA DC (Input resistance 100  $\Omega$ )
- G: 0 - 1 mA DC (Input resistance 1000  $\Omega$ )
- H: 10 - 50 mA DC (Input resistance 100  $\Omega$ )
- K: 0 - 100  $\mu$ A DC (Input resistance 1000  $\Omega$ )
- GW: -1 - +1 mA DC (Input resistance 1000  $\Omega$ )
- FW: -10 - +10 mA DC (Input resistance 100  $\Omega$ )
- Z: Specify current (See INPUT SPECIFICATIONS)

#### Voltage

- 15: 0 - 50 mV DC (Input resistance 10 k $\Omega$  min.)
- 16: 0 - 60 mV DC (Input resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Input resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Input resistance 1 M $\Omega$  min.)
- 4: 0 - 10 V DC (Input resistance 1 M $\Omega$  min.)
- 5: 0 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 6: 1 - 5 V DC (Input resistance 1 M $\Omega$  min.)
- 4W: -10 - +10 V DC (Input resistance 1 M $\Omega$  min.)
- 5W: -5 - +5 V DC (Input resistance 1 M $\Omega$  min.)
- 0: Specify voltage (See INPUT SPECIFICATIONS)

### [2] OUTPUT

- 1: Open collector
- 2: Relay; N.O. or make contact
- 3: Relay; N.C. or break contact
- 4: SSR

### [3] POWER INPUT

#### AC Power

- G: 200 V AC
- H: 220 V AC
- J: 240 V AC

#### DC Power

- S: 12 V DC
- R: 24 V DC

### GENERAL SPECIFICATIONS

- Construction:** Plug-in
- Connection:** M3.5 screw terminals
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output to power
- Setpoint adjustments:** Multi-turn screwdriver adjustments (front); 0 - 100% independently
- Monitor jacks:** Output 0 - 10 V for 0 - 100 % setpoints
- Hysteresis (deadband):** 0.5 - 1.0 %
- Front LEDs:** Red lights turn on in tripped conditions
- Power ON timer:** The output devices will not be driven for approx. 2 sec. after the power is turned on.

### INPUT SPECIFICATIONS

- **DC Current:**  
Shunt resistor attached to the input terminals (0.5 W)  
Specify input resistance value for code Z.
- **DC Voltage:** -30 - +30 V DC
- Span:** Min. 50 mV, Max. 30 V
- Offset:** Max. 1.5 times span
- Input resistance**  
Span 50 - 100 mV :  $\geq$  10 k $\Omega$   
Span 0.1 - 1 V :  $\geq$  100 k $\Omega$   
Span  $\geq$  1 V :  $\geq$  1 M $\Omega$

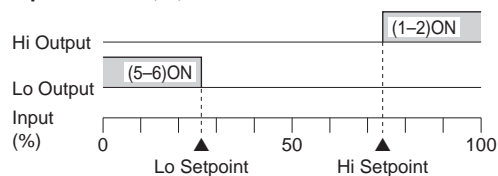


## OUTPUT SPECIFICATIONS

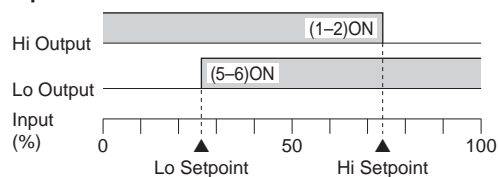
- **Open Collector:** 50 V DC @100 mA
  - Voltage drop:** ≤ 2 V
  - **Relay Contact:** 120 V AC @0.5 A ( $\cos \theta = 1$ )  
240 V AC @0.5 A ( $\cos \theta = 1$ )  
30 V DC @0.5 A (resistive load)
  - Maximum switching voltage:** 380 V AC or 125 V DC
  - Maximum switching power:** 100 VA or 30 W ( $\leq 0.5$  A)
  - Minimum load:** 5 V DC @10 mA
  - Mechanical life:**  $5 \times 10^7$  cycles
- For maximum relay life with inductive loads, external protection is recommended.
- **SSR:** 60 - 280 V AC @0.1 - 1 A
- Leakage current at OFF:** Approx. 10 mA (240 V AC)

**Alarm Trip Operation** Terminal No. in parentheses

- **Output Code : 1, 2, 4**



- **Output Code : 3**



## INSTALLATION

### Power input

- AC:** Operational voltage range: rating  $\pm 10$  %, 50/60  $\pm 2$  Hz, approx. 2 VA
- DC:** Operational voltage range: rating  $\pm 10$  %, ripple 10 %p-p max., approx. 2 W (80 mA at 24 V)
- Operating temperature:** -5 to +55°C (23 to 131°F)
- Operating humidity:** 30 to 90 %RH (non-condensing)
- Mounting:** Surface or DIN rail
- Weight:** 400 g (0.88 lbs)

## PERFORMANCE in percentage of span

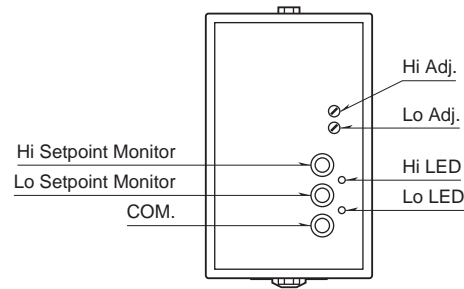
- Setpoint monitor accuracy:**  $\pm 0.5$  %
- Temp. coefficient:**  $\pm 0.02$  %/°C ( $\pm 0.01$  %/°F)
- Response time:**  $\leq 0.5$  sec. (0 - 100 % at 90 % setpoint)
- Line voltage effect:**  $\pm 0.1$  % over voltage range
- Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC
- Dielectric strength:** 2300 V AC @1 minute (input to output to power to ground)

## STANDARDS & APPROVALS

- CE conformity:**
- EMC Directive (2004/108/EC)
- EMI EN 61000-6-4
- EMS EN 61000-6-2
- Low Voltage Directive (2006/95/EC)
- EN 61010-1
- Installation Category II
- Pollution Degree 2
- Max. operating voltage 300 V
- Input or output to power: Reinforced insulation
- Input to output: Basic insulation

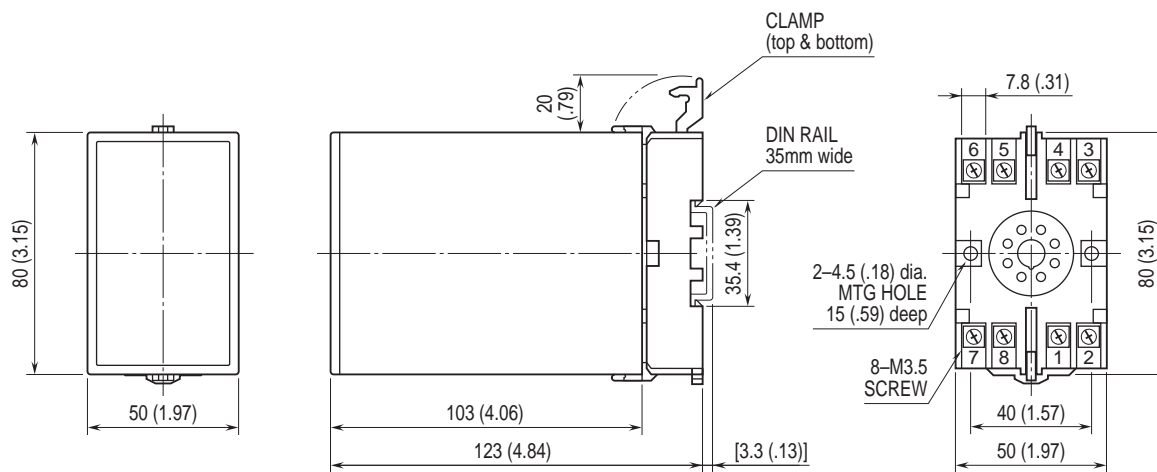


**EXTERNAL VIEW**



**DIMENSIONS unit: mm (inch)**

■OUTPUT CODE: 1, 2, 3, 4

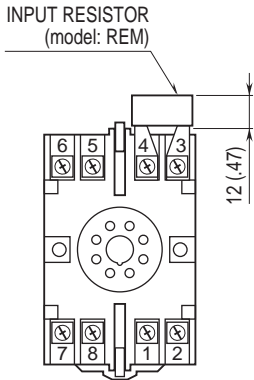


• When mounting, no extra space is needed between units.



**TERMINAL ASSIGNMENTS unit: mm (inch)**

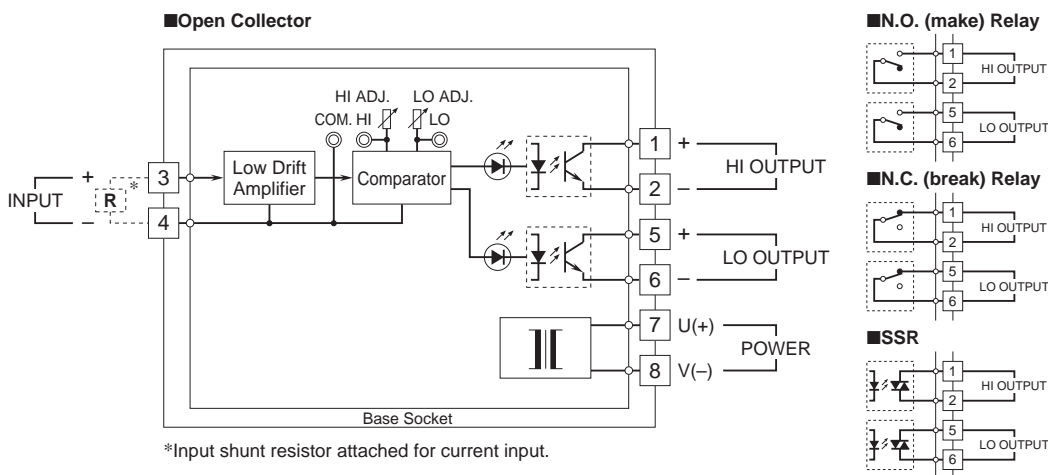
- Output Code 1, 2, 3 & 4



Input shunt resistor attached for current input.

**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**

- Output Code 1, 2, 3 & 4



Specifications are subject to change without notice.